

REMARKS:

In the Office Action dated December 21, 2007, claims 1-30, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks. Claims 1 and 8-30 remain in this application and claims 2-7 have been canceled.

Claims 1-30 were provisionally rejected under the judicially created doctrine of obviousness type double patenting as unpatentable over claims 1-35 of co-pending application no. 10/522,097, over claims 1-33 of co-pending application no. 10/519,978, and over claims 1-29 of co-pending application no. 10/522,157. Applicants request that this rejection be held in abeyance until the conflicting claims are patented.

Claims 1-30 were rejected under the judicially created doctrine of obviousness type double patenting as unpatentable over U.S. Patent No. 6,534,444. US Patent No. 6,534,444 generically discloses synergistic herbicidal mixtures, comprising

- A) at least one 3-heterocyclyl-substituted benzoyl derivative of the formula I; and
- B) a synergistically effective amount of at least one herbicidal compound from the group comprising certain herbicide classes.

In contrast to U.S. Patent No. 6,534,444, the subject matter of the present invention is a synergistic herbicidal mixture comprising at least three active ingredients: A) 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl-benzoyl]-1-methyl-5-hydroxy-1H-pyrazole, B) nicosulfuron and C) a further herbicide. 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl-benzoyl]-1-methyl-5-hydroxy-1H-pyrazole corresponds to compound 1a.33 in US Patent No. 6,534,444 and in Sievernich et al. (CA 2,334,955 corresponding to WO99/65314). The same compound is identified as 1a.29 in the present application. US

Patent No. 6,534,444 discloses binary synergistic herbicidal mixtures, e.g. la.33 and nicosulfuron (table 21) and la.33 and atrazine (table 68). US Patent No. 6,534,444 discloses ternary mixtures comprising la.33, atrazine and dimethenamide (table 70) or dicamba (table 82). However, there is no disclosure in US Patent No. 6,534,444 that would suggest ternary mixtures comprising la.33 (la.29 present application), nicosulfuron and a third herbicide selected from the group of the acetolactate synthase inhibitors (ALS), lipid biosynthesis inhibitors and photosynthesis inhibitors. Applicants point out that nicosulfuron is not encompassed by the definition for component B) in US Patent No. 6,534,444. One skilled in the art would know that a synergistic effect cannot be predicted from the herbicidal activity of the individual components as adverse effects may arise. Surprisingly, the presently claimed ternary mixtures provide a synergistic herbicidal effect, which clearly surpasses the effect of the binary mixture according to the state of the art. In view of the above discussion and amendments, applicants contend that the presently claimed invention is patentably distinct from claims 1-29 of US Patent No. 6,534,444 and request that this rejection be withdrawn.

Claims 1-33 were rejected under 35 USC §103(a) as unpatentable over Sievernich. Sievernich et al. (CA 2,334,955 corresponds to W099/65314) generically discloses synergistic herbicidal mixtures, comprising

- A) at least one 3-heterocyclyl-substituted benzoyl derivative of the formula I; and
- B) a synergistically effective amount of at least one herbicidal compound from the group comprising certain herbicide classes.

Sievernich does not disclose or suggest ternary synergistic herbicidal mixtures, comprising 4-[2-methyl-3-(4,5-dihydroisoxazol-3-yl)-4-methylsulfonyl- benzoyl]-l-methyl-5-hydroxy-lH-

pyrazole, nicosulfuron and a third herbicidal compound. Sievernich et al. teaches that compounds of formula I can advantageously be mixed with certain other herbicidal compounds. Exemplary, synergistic activity is proven for a number of binary mixtures of compounds of formula I with herbicides selected from the groups B1 to B16, e.g.

table 21: Ia.33 + nicosulfuron (B2)

table 68: Ia.33 + atrazine (612)

Sievernich et al. also teach synergistic ternary mixtures of compounds of formula I with:

table 76: nicosulfuron (B2) + dicamba

(B14) table 77+78: diflufenzopyr (B5) +

dicamba (B14)

table 79: dimethenamide (B9) + atrazine (B12)

table 80: bentazone (B12) + atrazine

(B12) table 81+82: atrazine (B12) +

dicamba (B14).

However, there is no motivation for one skilled in the art to use other mixtures than those exemplified as synergistic mixtures by Sievernich et al. Applicants contend that this document teaches away from the ternary mixtures according to the present invention. None of the ternary mixtures disclosed by Sievernich et al.

contains nicosulfuron as component B) and a third herbicide selected from the group of the acetolactate synthase inhibitors (ALS), lipid biosynthesis inhibitors and photosynthesis inhibitors. If one skilled in the art was looking for ternary synergistic mixtures other than those exemplified in Sievernich et al., he would only consider ternary mixtures based on the binary mixtures as exemplified in Sievernich et al. Due to the complex interactions of different active ingredients, there is no reason for one skilled in the art, having a wide selection of synergistically effective binary and ternary mixtures at his disposal, to take a risk with random mixtures from the generic disclosure. Surprisingly, the present inventors have now shown that the synergistic activity of mixtures comprising Ia.33 (Ia.29 present invention) and nicosulfuron or Ia.33 with atrazine as taught by Sievernich et al. in tables 21 and 68, can be surpassed with a ternary mixture comprising Ia.29, nicosulfuron and an herbicide selected from the group of the acetolactate synthase inhibitors (ALS), lipid biosynthesis inhibitors and photosynthesis inhibitors, exemplified with atrazine (present invention, tables 3 and 4). This effect could not have been predicted from the prior art. Furthermore, based on the disclosure of Sievernich et al., one skilled in the art would not have been able to make and use the presently claimed invention, as there was no suggestion that the inventive component B) should be selected from the wide range of potential mixing partners and to choose an additional third component C).

MPEP §2144.08 (II) states that:

"The fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) ("The fact that a claimed compound may be encompassed by a disclosed generic formula does not by itself render that compound obvious."); *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) (Federal Circuit has "decline[d] to extract from *Merck & Co. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir. 1989)] the rule that... regardless of how broad, a disclosure of a chemical genus renders obvious any species that happens to fall within it."). See also *In re Deuel*, 51 F.3d 1552, 1559, 34 USPQ2d 1210, 1215 (Fed. Cir. 1995)."

In the present situation, the synergistic effect resulting from components A, B and C as compared with components A and B, could not have been predicted from the disclosure in Sievernich CA 2,334,955. It is known in the art that a synergistic effect cannot be predicted from the herbicidal activity of the individual components as adverse effects may arise.

Applicants respectfully point out that the subject matter of the pending application is not effective but synergistic herbicidal mixtures. Support for these claims is provided by the respective experimental data. The Colby-value, which stands for the calculated additive effect, has to be compared to the observed effect (damage [%]). The data prove that the inventive mixtures result in a more than simply additive effect. As this is not predictable, the results are surprising and thus would not have been anticipated or obvious in view of the prior art. One skilled in the art would not have guessed or known which of the innumerable potential combinations from a generic disclosure or other prior art would show synergistic activity and not detrimental effects. In view of the above discussion, applicants request that this rejection be withdrawn.

Regarding the relationship between application rate and synergism as mentioned in the office action, applicants point out that these two parameters do not necessarily depend on each other. Normally, the application rate of an herbicide correlates with the damage observed in the undesired vegetation. As herbicides interfere with essential metabolic pathways, more damage is usually expected with higher application rates unless e.g. salvage pathways or other defensive mechanisms exist. The concentration [g/l] of the herbicide applied is not relevant as the application rate [g/ha] in the field also depends on the e.g. spray volume [l]. Thus, the only meaningful parameter for assessing the herbicidal activity is the application rate. As shown in examples 3 and 4 of the present application, mixtures comprising components A), B) and C) demonstrate a significant synergistic effect. One skilled in the art is able to determine the required amount of each herbicide to address the specific problem in the field. By providing examples for the inventive mixtures demonstrating substantial increase in activity over the additive effects at different application rates, with different mixing ratios and for a wide variety of important weeds, the invention is supported in a way that one skilled in the art can make and use the invention.

Applicants respectfully submit that all of claims 1 and 8-30 are now in condition for allowance. If it is believed that the application is not in condition for allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fee for such an

extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 02-2135.

Respectfully submitted,

By



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